

## CLAIMS

What is claimed is:

1. In a consumer electronic device that is coupled to a plurality of  
5 consumer electronic devices via a high-speed data bus, a method of scheduling  
and executing service-based requests, said method comprising steps of:

(a) receiving a service-based request from a user;

(b) constructing a service request list that stores a plurality of events to  
be executed chronologically and sequentially, wherein said plurality of events  
10 are device-specific and wherein said plurality of events are necessary for  
carrying out said service-based request;

(c) determining whether said service request list conflicts with another  
service request list; and

(d) provided that service request list does not conflict with said  
15 another service request list, storing said service request list and executing said  
plurality of events chronologically and sequentially according to said service  
request list.

2. A method as recited in Claim 1 wherein said service request list  
20 contains details of a source consumer electronic device and of a destination  
consumer electronic device, said details comprising control information and  
timing information of said source consumer electronic device and said  
destination consumer electronic device.

25 3. A method as recited in Claim 2 wherein said service request list  
further comprises information that describes routing information that allows said

source consumer electronic device to be routed to said destination consumer electronic device.

4. A method as recited in Claim 1 wherein said step (d) further  
5 comprises steps of:

determining a source consumer electronic device and a destination consumer electronic device that are necessary for performing said service-based request; and

determining availability of said source consumer electronic device and  
10 said destination consumer electronic device at a time said service-based request is to be rendered.

5. A method as recited in Claim 4 wherein said step (d) further  
comprises steps of:

15 determining a source consumer electronic device for receiving a broadcast program, an intermediate consumer electronic device for storing said broadcast program, and a destination consumer electronic device for displaying said broadcast program; and

determining availability of said source consumer electronic device and  
20 said intermediate consumer electronic device, and said destination consumer electronic device according to timing information contained within said service request list.

6. A method as recited in Claim 5 wherein said step (d) further  
25 comprises step of determining an amount of media of said intermediate consumer electronic device that is available for recording said broadcast program.

7. A method as recited in Claim 1 further comprising step of denying said service-based request provided said service-based request is in conflict with said another service-based request.

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8. A computer readable medium containing therein computer readable codes for causing a computer system to perform a method of scheduling and executing service-based requests, said method comprising steps of:

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(a) receiving a service-based request from a user;

(b) constructing a service request list that stores a plurality of events to be executed chronologically and sequentially, wherein said plurality of events are device-specific and wherein said plurality of events are necessary for carrying out said service-based request;

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(c) determining whether said service request list conflicts with another service request list; and

(d) provided that service request list does not conflict with said another service request list, storing said service request list and executing said plurality of events chronologically and sequentially according to said service request list.

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9. A computer readable medium as recited in Claim 8 wherein said service request list contains details of a source consumer electronic device and of a destination consumer electronic device, said details comprising control information and timing information of said source consumer electronic device and said destination consumer electronic device.

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10. A computer readable medium as recited in Claim 9 wherein said service request list further comprises information that describes routing information that allows said source consumer electronic device to be routed to said destination consumer electronic device.

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11. A computer readable medium as recited in Claim 8 wherein said step (d) further comprises steps of:

determining a source consumer electronic device and a destination consumer electronic device that are necessary for performing said service-based request; and

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determining availability of said source consumer electronic device and said destination consumer electronic device at a time said service-based request is to be rendered.

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12. A computer readable medium as recited in Claim 11 wherein said step (d) further comprises steps of:

determining a source consumer electronic device for receiving a broadcast program, an intermediate consumer electronic device for storing said broadcast program, and a destination consumer electronic device for displaying said broadcast program; and

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determining availability of said source consumer electronic device and said intermediate consumer electronic device, and said destination consumer electronic device according to timing information contained within said service request list.

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13. A computer readable medium as recited in Claim 12 wherein said step (d) further comprises step of determining an amount of media of said

intermediate consumer electronic device that is available for recording said broadcast program.

14. A computer readable medium as recited in Claim 8 further  
5 comprising step of denying said service-based request provided said service-based request is in conflict with said another service-based request.

15. A home server for coupling to a network of consumer electronic devices, said home server comprising:

- 10 (a) logic for receiving a service-based request from a user;
- (b) logic for constructing a service request list that stores a plurality of events to be executed chronologically and sequentially, wherein said plurality of events are device-specific and wherein said plurality of events are necessary for carrying out said service-based request;
- 15 (c) logic for determining whether said service request list conflicts with another service request list;
- (d) logic storing said service request list; and
- (e) logic executing said plurality of events chronologically and sequentially according to said service request list provided that service request  
20 list does not conflict with said another service request list.

16. A home server as recited in Claim 15 wherein said service request list contains details of a source consumer electronic device and of a destination consumer electronic device, said details comprising control information and  
25 timing information of said source consumer electronic device and said destination consumer electronic device.

17. A home server as recited in Claim 16 wherein said service request list further comprises information that describes routing information that allows said source consumer electronic device to be routed to said destination consumer electronic device.

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18. A home server as recited in Claim 15 wherein said logic for determining further comprises:

logic for determining a source consumer electronic device and a destination consumer electronic device that are necessary for performing said service-based request; and

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logic for determining availability of said source consumer electronic device and said destination consumer electronic device at a time said service-based request is to be rendered.

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19. A home server as recited in Claim 18 wherein said logic for determining further comprises:

logic for determining a source consumer electronic device for receiving a broadcast program, an intermediate consumer electronic device for storing said broadcast program, and a destination consumer electronic device for displaying said broadcast program; and

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logic for determining availability of said source consumer electronic device and said intermediate consumer electronic device, and said destination consumer electronic device according to timing information contained within said service request list.

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20. A home server as recited in Claim 19 wherein said logic for determining further comprises logic for determining an amount of media of said

intermediate consumer electronic device that is available for recording said broadcast program.

21. A home server as recited in Claim 15 further comprises logic for  
5 denying said service-based request provided said service-based request is in  
conflict with said another service-based request.

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REQUEST EVENT MANAGER AND EVENT LISTS FOR  
HOME AND OFFICE SYSTEMS AND NETWORKS

5    ABSTRACT

        A request event manager for a network of consumer electronic devices.  
In one embodiment, the request event manager maintains a database of home  
network services, and allows the home network services to be scheduled for  
execution over time. Home network services herein refer to high-level  
10    abstractions of a consumer electronic device's functionalities, and also content  
that is available from the consumer electronic device. The request event  
manager of the present invention also creates and maintains a service request  
list (SRL) which details the service actions in a hierarchical fashion. By  
maintaining a database of home network services, the request event manager  
15    of the present invention allows user applications to specify and schedule  
concatenated or hierarchical events such that different network activity across  
interconnected heterogeneous consumer electronic devices can be  
synchronized without requiring complicated logic to be implemented. The  
request event manager of the present invention may be implemented as part of  
20    a middleware infrastructure for a home network, and may reside within a home  
server.